Daniel Oliver Connor, J Bacteriol Parasitol 2016, 7:6 (Suppl)
http://dx.doi.org/10.4172/2155-9597.C1.026

Identification of immunogenic proteins of human pathogenic bacteria utilizing phage display

Daniel Oliver Connor
Fraunhofer Institute for Cell Therapy and Immunology-IZI, Germany

Recent evolutionary development of antibiotic resistances of many human pathogens leads to an inevitable necessity to discover new ways in diagnostics and treatment of those pathogenic bacteria. Unfortunately, knowledge of suitable antigens and promising protein candidates is not provided for many pathogens. Therefore, the aim of this study was to identify novel immunogenic proteins of three different human pathogenic bacteria: *Borrelia burgdorferi*, *Neisseria gonorrhoeae* and *Neisseria meningitidis*. Genomic phage display libraries of all three pathogens were constructed with 106-107 individual clones and screened for the identification of immunogenic proteins. Subsequently, corresponding full length proteins were expressed and their immunogenic character verified by ELISA. 21 potentially immunogenic proteins were identified for *N. gonorrhoeae* wherefrom six proteins were described as immunogenic for the first time. The determined immunogenic proteins of *B. burgdorferi* and *N. meningitidis* had been mostly described in literature but could be verified in this work. Additionally, these results showed that the identification of immunogenic proteins utilizing phage display is feasible for human pathogenic bacteria and a fast and straightforward approach. The identified proteins will be further examined for linear epitopes to identify the immunodominant regions. Furthermore, ongoing studies include the development of recombinant antibodies against the identified proteins. These antibodies will then be used for further characterization of the identified immunogenic proteins and to investigate their potential as suitable candidates including diagnostics.

Biography

Daniel Oliver Connor has recently submitted his PhD thesis at the University of Potsdam including two first author peer reviewed publications. He has completed his BSc at the Hochschule Furtwangen University and MSc at the Westfälische Wilhelms-Universität Münster. He has contributed his knowledge and scientific experience at Merckle Biotech, NMI Tübingen and the Fraunhofer IZI-BB (formerly IBMT) in Potsdam.

daniel.connor@izi-bb.fraunhofer.de

Notes: